

18. A flight data recording system comprising an onboard flight data recorder unit and a ground-based data retrieving station, wherein said onboard flight data recorder unit is comprised of a central processing unit, a plurality of sensors monitoring the aircraft's condition, a global position system (GPS) receiver, a non-volatile memory for recording flight data and a wireless communications transceiver for retrieving said data all contained in a single physical enclosure.
19. The system of claim 18 wherein said onboard flight data recorder unit is a single piece of equipment containing <sup>AR</sup>the ~~devices~~ and most of the sensors needed in performing the function of recording the aircraft's location and behavior.
20. The system of claim 18 wherein said onboard flight data recorder unit is comprised of one single piece of equipment which can be installed on an aircraft by mounting said equipment on the aircraft floor or wall with bolts, attaching the GPS and communications antennas to the windshield, attaching the temperature sensor to the aircraft's vent and connecting wires to the aircraft power supply and ignition switch without the need to connect to the aircraft's flight instruments, thereby making the installation process simpler and less costlier compared to multiple equipment systems, especially those which have to interface to flight instruments.
21. The system of claim 18 wherein said wireless transceiver communicates with said ground-based data retrieving station comprised of a general-purpose desktop computer interfaced to a wireless transceiver wherein said transceivers transmit at low-power and have short communications range and said data retrieval is performed on the ground at the end of the flight.
22. The data retrieving station of claim 21 wherein said station can also be implemented as a battery-operated portable computing device with a built-in wireless transceiver that can be held by a single human hand, allowing the person operating the retrieving station to approach the aircraft when retrieving data.
23. The system of claim 18 wherein said wireless means of communications can also operate underwater, allowing data stored in the flight data recorder to be retrieved even if the aircraft is submerged in water.
24. A method of recording aircraft position data by computing <sup>AR</sup>the difference between <sup>AR</sup>the ~~current~~ and previous coordinates generated by the <sup>a</sup>GPS receiver of claim 18, and then storing this difference instead of the coordinates, thereby saving on memory space.

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